

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 40-55 and 78, drawn to a solid oxide fuel cell comprising a cathode, an anode and at least one electrolyte membrane disposed between said anode and said cathode, wherein said anode comprises a cermet comprising a metallic portion and an electrolyte ceramic material portion, said portions being substantially uniformly interdispersed, said metallic portion having a melting point equal to or lower than 1200°C; said cermet having a metal content higher than 50 wt%, and a specific surface area equal to or lower than 5 m<sup>2</sup>/g.

Group II, claim(s) 56-59, drawn to a method for producing energy comprising the steps of: a) feeding at least one fuel into an anode side of a solid oxide fuel cell comprising an anode comprising a cermet comprising a metallic portion and an electrolyte ceramic material portion, said portions being substantially uniformly interdispersed, said metallic portion having a melting point equal to or lower than 1200°C; said cermet having a metal content higher than 50 wt%, and a specific surface area equal to or lower than 5 m<sup>2</sup>/g; a cathode; and at least one electrolyte membrane disposed between said anode

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and said cathode; b) feeding an oxidant into a cathode side of said solid oxide fuel cell; and c) oxidizing said at least one fuel in said solid oxide fuel cell, resulting in production of energy.

Group III, claim(s) 60-77, drawn to a process for preparing a solid oxide fuel cell comprising a cathode, an anode and at least one electrolyte membrane disposed between said anode and said cathode, wherein said anode comprises a cermet including a metallic portion and an electrolyte ceramic material portion; said process comprising the steps of: providing a cathode; providing the at least one electrolyte membrane; and providing an anode wherein the step of providing the anode comprises the steps of: a) providing a precursor of the metallic portion, said precursor having a particle size of 0.2  $\mu\text{m}$  to 5  $\mu\text{m}$ ; b) providing the electrolyte ceramic material having a particle size of 1  $\mu\text{m}$  to 10  $\mu\text{m}$ ; c) mixing said precursor and said ceramic material to provide a starting mixture; d) heating and grinding said starting mixture in the presence of at least one first dispersant; e) adding at least one binder and at least one second dispersant to the starting mixture from step d) to give a slurry; f) thermally treating said slurry to provide a pre-cermet; and g) reducing the pre-cermet to provide the cermet.

2. The groups of inventions listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical features of the anode, cathode and electrolyte of Group I is not defined in the inventions of Group II and Group III. Technical features of the process of Group II such as the operating temperature and the fuel used are not defined in the inventions of

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Group III and Group I. Additionally, technical features of process of Group III such as the precursor and the its particle size, the particle size of the electrolyte material and etc are not defined in neither the invention of Group II nor the invention of Group III.

3. In addition if Group I is elected, it contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

- i. Claims 40-49, 51, and 78
- ii. Claims 40-49, 52, and 78
- iii. Claims 40-49, 53, and 78
- iv. Claims 40-49, 54, and 78
- v. Claims 40-47, 50, 51, and 78
- vi. Claims 40-47, 50, 52, and 78
- vii. Claims 40-47, 50, 53, and 78
- viii. Claims 40-47, 50, 54, and 78
- ix. Claims 40-47, 55, 51, and 78
- x. Claims 40-47, 55, 52, and 78
- xi. Claims 40-47, 55, 53, and 78
- xii. Claims 40-47, 55, 54, and 78

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise require all the limitations of an allowed generic claim. Currently, the following claim(s) are generic: Claims 40-47, 55, 54, and 78 (please note that upon election of the generic Group xii, claim 54 should be re-written to contain limitation of both claims 51 and 52).

#### 4. REQUIREMENT FOR UNITY OF INVENTION

As provided in 37 CFR 1.475(a), a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed in a national stage application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim. See 37 CFR 1.475(e).

#### WHEN CLAIMS ARE DIRECTED TO MULTIPLE CATEGORIES OF INVENTIONS

As provided in 37 CFR 1.475(b), a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

- (1) A product and a process specially adapted for the manufacture of said product; or
- (2) A product and process of use of said product; or
- (3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or
- (4) A process and an apparatus or means specifically designed for carrying out the said process; or
- (5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Otherwise, unity of invention might not be present. See 37 CFR 1.475(c).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention or species.

Should applicant traverse on the ground that the inventions have unity of invention (37 CFR 1.475(a)), applicant must provide reasons in support thereof. Applicant may submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. Where such evidence or admission is provided by applicant, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise

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require all the limitations of the allowable product claim will be considered for rejoinder.

All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LADAN MOHADDES whose telephone number is (571)270-7742. The examiner can normally be reached on Monday to Thursday from 8:30 AM to 6:00 PM (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LADAN MOHADDES/  
Examiner, Art Unit 1726

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